

NOTES ON SOME FISHES OF THE FAMILIES URANOSCOPIDAE, SCORPAENIDAE, OPHICHTHIDAE AND MURAENIDAE FROM TORRES STRAIT

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Synopsis

A specimen of the striped stargazer, *Ichthyscopus fasciatus*, is described from Torres Strait. Nine other specimens are recorded from northern Australia and southern New Guinea, of which one is a new record for Western Australia. A specimen of *Paracentropogon longispinis* from Torres Strait is described; *Paracentropogon vespa*, *P. indicus* and *P. zonatus* are probable synonyms. The eel species *Ophichthus evermanni* and *Gymnothorax reticularis*, not previously recorded from Australian waters, are described from specimens obtained off Darnley Island. The eels were part of the stomach contents of seasnakes.

INTRODUCTION

The Fisheries Research and Survey Station in Port Moresby, Papua New Guinea, has in recent years received two collections of fishes from Torres Strait off North Queensland. The first was trawled at depths of 9.1–18.3 m in May 1970, in the vicinity of Cocoanut Island (10°03'S., 143°06'E.) by Mr. E. Whitten. The second consisted of partly digested fishes comprising part of seasnake gut contents. The snakes were trawled off Darnley Island (9°36'S., 143°50'E.) by Mr. C. O'Brien on November 11, 1972 and their gut contents delivered to the Fisheries Research Station by Mr. F. Parker for identification.

Descriptions of and remarks on the most noteworthy specimens are presented. Measurements expressed in thousandths of standard length (SL) are presented in tables. All specimens are registered in the Fisheries Research fish collection (FO) in Port Moresby. Specimens of *Ichthyscopus fasciatus*, *Paracentropogon vespa*, *P. vespa livingstoni*, *P. longispinis* and *P. rubripinnis* from the Australian Museum (AMS), Sydney, were examined, as were specimens of *P. vespa* from the Western Australian Museum, Perth, and the Queensland Museum, Brisbane.

Ichthyscopus fasciatus Haysom

Fig. 1

Ichthyscopus fasciatus Haysom, 1957: 139, fig. 1

Mees (1960) lists five species of *Ichthyscopus* from Australia: three from Western Australia and two from eastern Australia. At that time

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I. fasciatus was known only from the holotype, 102 mm standard length (SL), trawled in Cleveland Bay near Townsville, Queensland (19°15'S., 146°48'E.), in 1955.

Ten other specimens have since been collected, as follows: one specimen (AMS IB. 7172), 113 mm SL, coll. G. P. Whitley, Gulf of Carpentaria (14°00'S., 138°36'E.); two specimens (AMS I. 15557-214), 92 mm and 146 mm SL, coll. I. S. R. Munro, October 1, 1963, off Bentinck Island, Gulf of Carpentaria (16°51'S., 139°23'E.), 9.1 m, trawl; one specimen (AMS IB. 5851), coll. G. Coates, 1962, off Townsville, Queensland, trawl; three specimens, none held in any collection, between mid-1970 and mid-1971, between Townsville and Princess Charlotte Bay (14°20'S., 144°00'E.), prawn trawl (Grant, personal communication, 1972); one specimen in the fish collection of Rijksmuseum van

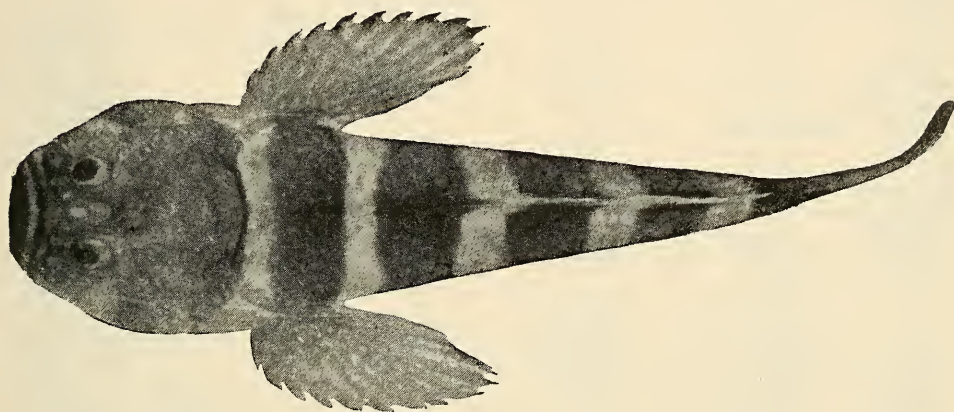


Fig. 1. *Ichthyscopus fasciatus* Haysom from Cocoanut Island, Torres Strait. Standard length 124 mm.

Natuurlijke Historie, Leiden, from the "south coast of (Dutch) New Guinea" (Mees, personal communication, 1970); one specimen, held in the fish collection of the Western Australian Museum, Perth, April 26, 1968, Admiralty Gulf (14°20'S., 125°53'E.), 14.6-18.3 m, trawl, a new record for Western Australia, "agrees well with Haysom's . . . description of the holotype The belly and the base of the pectoral fin are darker than illustrated in figure 1 of Haysom, and the caudal fin lacks the small brown patch near the base of the two uppermost rays. A strong humeral spine is present." (McKay, personal communication, 1973); one specimen (FO 2344), Cocoanut Island, Torres Strait, compares with the holotype as follows:

Total length 158 mm; standard length 124 mm. D.20; A.18; P.i,13,i; V.1,5; C.i,10,i; L.lat. approximately 60. Depth 3.6. Head 3.1 in SL. Eye 7.1 in head, 1.4 in interorbital and 1.6 snout length (see Table 1). On upper and lower lips transverse ridges broken into papillae, with branched filaments at their ends. Filaments more developed on lower lip. Villiform band of sharp teeth in upper jaw and on vomer. In lower jaw, row of small pointed teeth near symphysis and inside of this one row of larger canine-like teeth well-spaced towards symphysis. Nostrils oval and fringed. Humeral spine strong but blunt, largely concealed in fringed dermal flap.

Coloration similar to Haysom's (1957) description and figure except that, as with the Western Australian specimen, there is no brown patch at the base of the caudal fin. In addition, there is an oval, brown-edged white ocellus on the naked interorbital and several smaller ones on the dark chin. Brown shading near the base of the pectoral fin and on the edges of all fins except the dorsal.

TABLE 1

Measurements expressed in thousandths of standard length for *Ichthyscopus fasciatus* and of total length for *Gymnothorax reticularis* and *Ophichthus evermanni*

	<i>Ichthyscopus fasciatus</i>	<i>Gymnothorax reticularis</i>	<i>Ophichthus evermanni</i>
Total length (mm)	158	356	604
Standard length (mm)	124	—	—
Depth	277	44	32
Head	315	158	104
Eye	44	17	8
Snout	27	21	19
Interorbital	61	14	13
Snout to anus	—	457	458
Snout to dorsal fin origin	—	101	116
Trunk	—	299	353
Tail	—	545	543
Gill-opening	—	9	11
Snout to rictus	—	42	32
Pectoral fin	293	—	22
Above gill opening to dorsal fin origin	—	—	17

Paracentropogon longispinis (Cuvier and Valenciennes).

Apistus longispinis Cuvier and Valenciennes, 1829: 408.

Synonyms: *Centropogon indicus* Day, 1875: 157, pl. 38, fig. 2.

Paracentropogon vespa Ogilby, 1910: 116 (a suppressed publication); McCulloch, 1921: 173, pl. 10, fig. 2.

Prosopodasys zonatus Weber, 1913: 502.

Paracentropogon vespa livingstoni Whitley, 1933: 94.

One example (FO2293), SL 64 mm, was obtained from Cocoanut Island. D.IV,7; A.III,4; P.i,9; C.ii,5+4,ii (ignoring rudiments); V.I,4; L.lat. tubules 19 or 20, plus one on base of caudal fin.

Because this specimen agreed well with descriptions of several species of *Paracentropogon*, it was decided to measure the variation in as many specimens as possible to ascertain whether those species were synonymous. In all, 30 specimens of *P. vespa*, 5 of *P. vespa livingstoni* (shown to be a synonym of *P. vespa* by Mees, 1964), 2 of *P. longispinis* and 7 of *P. rubripinnis* (Temminck and Schlegel) were examined. Descriptions of these species and of *P. indicus* (Day) and *P. zonatus* (Weber) were also studied. *Paracentropogon rubripinnis* emerged as a valid species, differing from the others in having longer anterior dorsal spines (see Table 2), scarcely developed scales, fewer pored scales in the lateral line and slightly different coloration (as pointed out by McCulloch, 1921, p. 174).

Among the other four nominal species there was little variation. The key characters used by Herre (1952) and de Beaufort (1962) to separate the species are the number of caudal rays, the relative lengths of the dorsal spines, and the direction of the anterior preorbital spine. In the species

studied, the anterior preorbital spine was invariably directed down and back in all specimens and figures examined. (Note however that Herre, p. 459, states that this spine is pointed forward in *P. zonatus*, though de Beaufort says it points downwards). The caudal fin normally contained 8-11 divided rays (3-6+3-5) and 2 well-developed simple rays on the upper and lower edges, plus several rudimentary rays. In two specimens of *P. vespa*, one of them a type, there were abnormal caudal fin ray counts, possibly caused by regeneration after damage (type—AMS IA. 139: C.ii,5+5,ii,4,ii, and AMS IA. 4258: C.x,5+3,ii). The second and third dorsal spines are the longest in all species. As well as other characters, Table 2

TABLE 2

Range of measurements expressed in thousandths of standard length for four species of *Paracentropogon*

Character	<i>P. vespa</i> (30 specimens)	<i>P. vespa livingstoni</i> (5 specimens)	<i>P. longispinis</i> (2 specimens)	<i>P. rubripinnis</i> (7 specimens)
Standard length (mm) ..	19-88	37-59	46-67	44-62
Depth	301-403	330-359	327-357	304-357
Head length	338-437	379-408	339-396	342-388
Eye diameter	98-138	119-132	97-117	84-116
Snout length	81-120	76-119	93-107	82-105
Interorbital length ..	63-105	70-80	63-74	58-74
Anterior preorbital spine ..	22-48	24-39	28-46	18-27
Posterior preorbital spine	79-133	92-112	88-104	92-118
First dorsal spine	102-152	107-150	124-128	98-127
Second dorsal spine	180-237	181-239	210-241	205-315
Third dorsal spine	172-266	198-229	241-246	225-323
Fourth dorsal spine	156-235	166-212	176-200	170-295
Last dorsal spine	168-243	155-217	187-206	152-185
First anal spine	84-164	81-168	100-102	90-125
Second anal spine	148-218	146-216	143-159	145-173
Third anal spine	185-256	202-236	187-191	169-198
Soft dorsal fin height ..	179-268	203-256	174-252	169-213
Soft anal fin height ..	169-269	229-264	191-242	144-195
Ventral fin length	248-313	268-320	285-342	238-272
Pectoral fin length	313-389	339-371	322-376	316-368
Longest preopercular spine	69-108	73-97	72-106	68-104
Snout plus eye	182-232	203-246	193-220	180-248
Head without snout	278-342	308-336	282-304	292-339
Postorbital part of head ..	173-221	189-227	185-191	189-208

gives the measurements of dorsal and anal spines expressed in thousandths of standard length. From these it can be seen that there is no appreciable difference between the relative spine lengths of different species (except for *P. rubripinnis*). No figures for *P. indicus* or *P. zonatus* are given therein. However, Herre (1952, p. 448) states that in *P. indicus* the second and third dorsal spines (the longest) go twice in the head length and those of *P. longispinis* 1.1-1.3. In the specimens of *P. longispinis* and *P. vespa* (and *P. vespa livingstoni*) measured, the second dorsal spine went 1.5-2.2 in the head length, which embraces Herre's figure for *P. indicus* (note also that for the *P. longispinis* specimens measured, the second and third dorsal spines went 1.6 and 1.4-1.6, respectively, in the head). In *P. zonatus* the second spine is "equal to head without snout and longer than third spine. Fourth and following spines shorter, . . ." (de Beaufort, 1962, p. 82).

Of *P. indicus*, Day (1875, p. 154) notes that all the pectoral rays (10) are branched. The usual pectoral count for the specimens examined was 1 simple ray and 9 branched rays, but two specimens had all rays branched on one fin each, and one specimen had one fin with i, 10. *P. zonatus* has

i,10 (de Beaufort) or ii, 9 (Herre) (probably i, 10 here too). The number of rays in the dorsal and anal fin of each species varies in descriptions between 7 and 8, and 4 and 5, respectively. I found that the last ray is always split to a common base which is enlarged and that the usually thin secondary ray is well-developed, branched, and generally diverges widely from the primary ray. The last ray thus appears as 2 entire rays.

Description. The salient features of *P. longispinis* based on the 37 specimens studied are: D.XIV-XV,6-7; A.III,4 (de Beaufort notes a specimen of Bleeker's with A.IV,4); P.i,9-10 (rarely P.10-11 or i,10); V.I,4 (I,2 in one specimen); C.ii,8-11,ii plus several rudimentary rays (see also discussion above); 18-22 tubules in lateral line plus one on base of caudal fin; G.R. 1-2+1+5-6.

Anterior profile of head steep; dorsal fin origin above middle of eye. Maxillary reaches more or less below middle of eye. Anterior preorbital spine small, directed down and back, two to four times shorter than posterior preorbital spine which equals or is slightly shorter than eye diameter. Posterior preorbital spine reaches almost to hind border of eye or extends past it as far as half-way to preopercular margin. Hind border of preopercle with strong spine 0.9-1.5 in posterior preorbital spine, and with four short, blunt spines below it. Two weak divergent spines on opercle with blunt tips.

First dorsal spine slightly longer than snout, or 0.8-1.2 in eye (average 0.9). Second dorsal spine 1.4-1.9 longer than first, and 1.5-2.2 in head length. Third dorsal spine 1.4-1.9 in head length and usually longer than head without snout. Third spine longest, rarely shorter than or equal to second spine. Last dorsal spine approximately equals third anal spine which is 1.2-2.0 in head; both subequal to longest dorsal spine. Ventral fins equal to head without snout (occasionally more or less), 1.0-1.5 in head. Ventrals fall short of, or reach, anus and sometimes extend as far as second anal spine. Pectorals longer than ventrals, slightly less than head length, though sometimes equal to or longer than head.

Colour of preserved specimens mottled with dark brown over a pinkish or light brown background. Ventrals are dark brown or black distally (in only a few was a white spot present) and often a dark band extends across posterior half of caudal. Only *P. indicus* lacks a white spot above the lateral line below the tenth and eleventh dorsal spines according to descriptions, although in specimens of other species this white spot is occasionally absent, often faded or often conspicuous. The presence of a large black patch between the fifth and eighth dorsal spines is apparently also variable. It is described as present in *P. vespa*, *P. zonatus* and *P. longispinis* (Herre, 1952; Günther, 1860) and absent in *P. indicus* and *P. longispinis* (de Beaufort, 1962; Day, 1875). Yet Day's figures (pl. 38) of *P. indicus* and *P. longispinis* both show a dark area on the spinous dorsal. In the preserved specimens of *Paracentropogon* examined, this patch varies in intensity from black to faded or light brown and in two specimens is absent altogether.

Conclusion. From the specimens and descriptions studied, I have found no single character, or combination of characters, which distinguishes any of these species (*P. vespa*, *P. zonatus*, *P. longispinis* and *P. indicus*) from each other. Therefore, *P. vespa*, *P. zonatus* and *P. indicus* are regarded as synonyms of *P. longispinis*. De Beaufort, Herre and McCulloch have all remarked on the similarity to *P. longispinis* of *P. zonatus*, *P. indicus* and *P. vespa*, respectively.

Marshall (1964) records *P. longispinis* (as *P. vespa*) from Queensland and North Australia, where it is occasionally trawled. It also occurs in Western Australia, at least between Broome (18°00'S., 122°10'E.) and Shark Bay (25°30'S., 113°40'E.) (Mees, 1964). The species has not been recorded from Papua New Guinea.

Ophichthus evermanni Jordan and Richardson

Fig. 2a

Ophichthus evermanni Jordan and Richardson, *Mem. Carnegie Mus.*, 4(4), 1909, p. 172, pl. 67.

One specimen (FO3796) obtained from Darnley Island, Torres Strait. This specimen was among the gut contents of the snake *Hydrophis (Leiostelasma) elegans* (Grey). The posterior half of the tail is partly digested, with the tip missing. Total length approximately 604 mm.

Depth 31 in total length, 3.2 in head. Head 9.6 in total length, 3.4 in trunk. Eye 12.5, snout 5.6, snout to rictus 3.3, interorbital 8, pectoral fin 4.8, all in head. Space between dorsal fin origin and vertical line from gill opening 6 in head. Eye 2.2 in snout. Snout to dorsal fin origin 8.7 in total length. Snout to anus 1.2 in tail and 2.2 in total length. (See Table 1.)

Anterior nostril in broad tube, posterior nostril labial, below front border of eye, hidden by bulge of skin. Two thin skin flaps on lips: smaller below middle of eye, larger midway between nostrils. Lips fold into mouth. Eye above posterior half of mouth gape. Lower jaw begins slightly in advance of large skin flap. Numerous pores on head: along upper and lower jaws, behind rictus, around eye and along snout, which is pointed. Body thick and cylindrical. Dorsal fin origin behind head, above tip of pectoral fin. Deep predorsal groove extends to occiput. Pectoral fin rounded with about 16 rays, base restricted. Teeth sharp, curved, uniserial. Part of intermaxillary tooth patch before lower jaw.

Colour in formalin greyish white below, pale brown above, with irregular dark brown bands or blotches on back reaching to middle of sides. Area from snout to rictus dark brown, separated by white patch from broad black band across nape, which in turn followed by thinner white band. Anal and pectoral fins pale, dorsal light brown.

This species was previously known to extend from Japan and Taiwan to the Philippines (Fowler, 1932; Chen and Weng, 1967). It is similar in coloration and dentition to *Ophichthus retifer* Fowler and *O. bonaparti* (Kaup) (Smith, 1962b; Weber and de Beaufort, 1916) but differs in some body proportions, in the position of the dorsal fin origin and in relative jaw lengths. *Ophichthus evermanni* is also close to *O. cephalozona* Bleeker, but differs in possessing numerous irregular cross bands along the body, whereas *O. cephalozona* has only one nuchal band and a plain body. The specimen is a new record for Queensland and Australia. Although not yet found in Papua New Guinea, it is likely that it occurs there also.

Gymnothorax (Priodonopsis) reticularis Bloch

Fig. 2b

Gymnothorax reticularis Bloch, *Ausl. Fische* IX, 1795, p. 85. pl. 416.

One specimen (FO3794) was obtained from the gut contents of a gravid female snake, *Hydrophis (Leiostelasma) elegans* (Gray) trawled off Darnley Island. The specimen is complete except for the skin on the tail. Total length 356 mm.

Depth 22.7 in total length, 3.6 in head. Head 6.3 in total length and 1.9 in trunk. Eye 9.4, snout 7.6, interorbital 11, snout to rictus 3.7, all in head. Snout to dorsal fin origin 1.6 in head, 9.9 in total length. Snout to anus 2.2 in total length and 1.2 in tail. (See Table 1.)

Anterior nostril in short tube, posterior nostril pore above front of eye. Snout bluntly rounded. Eye in posterior half of mouth gape. Lips with several rows of tiny papillae. Strong, pointed, triangular teeth uniserially arranged in jaws and vomer. No median intermaxillary canines. Edges of most teeth distinctly and finely serrated. Gill openings oblique, slightly below middle of sides. Dorsal fin thin, origin about halfway between eye and gill opening.

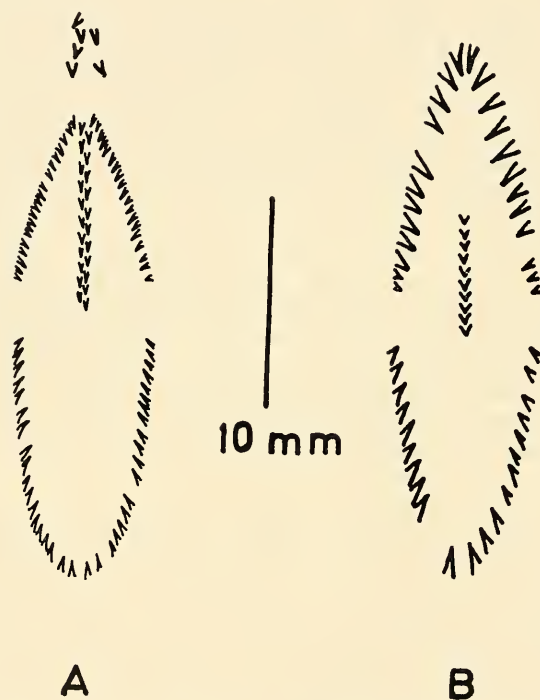


Fig. 2. Dental pattern of two eels from Darnley Island, Torres Strait. A. *Ophichthus evermanni* Jordan and Richardson. Total length approx. 604 mm. B. *Gymnothorax reticularis* Bloch. Total length 356 mm.

Colour in isopropyl alcohol greyish white below, pinkish above, with about 20 dark brown crossbands narrower than interspaces, first on nape. Bands darker ventrally and on fins. Head and upper half of body between bands covered with small brown spots of various sizes.

Gymnothorax reticularis is distinguished from other moray eels by its serrated teeth and coloration. The species is also known from India (Day, 1875), Taiwan and Japan (Chen and Weng, 1967), Mozambique (Smith, 1962a), Fiji (Whitley, 1926) and the New Hebrides (Fowler, 1934). As well as the specimen from Darnley Island, the Kanudi collection contains two small tails of *G. reticularis* coloured similarly to the whole specimen, taken from the gut contents of a seasnake, *Aipysurus duboisii* Bavay, trawled off Weipa (12°40'S., 141°58'E.), Gulf of Carpentaria,

June 20, 1972 (FO4133). These tails and the Darnley Island specimen are the first records of *G. reticularis* from Australia. *Gymnothorax reticularis* has also recently been found in Papua New Guinea (Kailola, in press).

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